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MEDICAL AND VITAL STATISTICS:

ARE THEY RELIABLE?

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ARE THEY RELIABLE?

GENTLEMEN.—I have selected for this evening the subject of "Medical and Vital Statistics: are they reliable?" The subject is one of the most important in sanitary science. It has no doubt occurred to some of you that there are defects which might be remedied, and errors discovered which might be corrected, in the system as adopted. As to the statist, as he continues his studies, he will find that his discoveries are not new,—that there are various practical objections to his proposed improvements, and that it is much easier to confine his objections to that which is, than to point out clearly and definitely that which ought to be, and which is at the same time demanded. Statistical registration includes the records of all circumstances affecting the production or duration of human life; it includes records of the population living at a given period, also a record of the changes taking place in a community by births, marriages and deaths; it includes methods of preserving in an authentic and permanent form the memory of facts in pathology "as they occur and furnish material upon which future statists and pathologists will build a comprehensive and definite system of scientific medicine. Our general statistics are made through the system of the census, which, by reason

of its magnitude and lack of method, must be imperfect; and authors are so well aware of this fact that general statistics are usually taken *cum grano salis*."

We have no information that the ancients had any system of registration, although the Jews, Athenians, and Romans had a system by which registration was carried out, though imperfectly. It is stated that in Japan, China, and Peru, information of this character was collected. In Egypt and in Rome records of births in certain families appear to have been kept. But the first steps towards a general registration were taken through the clergy about the beginning of the sixteenth century. The earliest registers were those kept at Augsburg and Breslau, which antedated the order of Lord Thomas Cromwell, in 1538, directing the keeping of parish registers in England. Little attention was paid to these English parish registers until a quarter of a century after, when a peremptory order was issued that such records should be kept in the churches, and, to afford greater security, were written on parchment. In France, in the year 1539, notice and the requirements for registration were required to be brought before the court; and by the seventeenth century such records were in general use in Western Europe. Bills of mortality for the purpose of preventing the diffusion of the plague were issued weekly in London as far back as 1603, and were continued until the present system of registrar-general was established. These bills were under the superintendence of the Company of Parish Clerks of London, first incorporated in 1233 as the Fraternity of St. Nicholas. In 1625, three hundred and ninety-two years later, this corporation obtained a decree from the Star Chamber allowing a press to be kept for the printing of bills of mortality of the city and liberties of London, for which purpose the Archbishop of Canterbury appointed a printer. In 1629 these bills were arranged to show distinction of sex and cause of death. In 1728, about a century after, the distinction of age was introduced, but the distinction of sex was shown only for the total number of deaths, and not for each disease or for each group of ages. So we see that at that early date vital statistics were almost useless,—at least chaotic.

In 1662, John Graunt, Fellow of the Royal Society, published the first treatise on Vital Statistics. The first bills of mortality in which the ages were inserted appear to have been those of Breslau. In 1667, France directed that copies of vital registers should be accepted

as legal proof of the facts set forth. About this period the religious wars interfered much with the important system of registration, and it was not until the lapse of one hundred and two years—1685–1787—that Protestant registers were made legal. After the Revolution of 1789 registration passed entirely from the hands of the clergy. The parochial registers of England were exceedingly imperfect. Infants dying before baptism were not recorded; in fact, the best of them showed only burials and baptisms, not the births or deaths; neither were they kept by all denominations, nor in hospitals or infirmaries having private burial-grounds. This system, though imperfect, was brought to America by the early settlers of New England, and from 1639 to the present time improvements by detail classification have been introduced, so that, notwithstanding there are still imperfections as records, they are generally accepted; not, however, without due allowance.

There are four objects sought to be accomplished by systematic registration of births, marriages, and deaths in a community.

The first is for a legal purpose, being to identify individuals in their relations to their families and to the community, and rests upon the same grounds as that of recording titles of property, etc.

Secondly, for the prevention and detection of crime.

Thirdly, so far at least as births and deaths are concerned, to furnish data for sanitary purposes; that is, to give warning of the undue increase of disease, or death presumed to be, due to preventable causes, and also to indicate the localities in which sanitary effort is most desirable and most likely to be of use.

Fourthly, to collect data for scientific purposes as bearing on the laws of human development,—a registration law which is upon the whole satisfactory in theory not infrequently becoming practically useless, owing to the character of the power selected to supervise its execution. In our own case, the general government should take the matter in hand, and, through an established permanent department regulated by proper Congressional legislation, secure proper vital statistical returns. Most of the States have registration laws, but many of them are inefficiently enforced. Some few years back the duty was imposed upon me to investigate the cases of contagious and infectious diseases officially reported to the Health Department. Cases of varicella were reported as varioloid, and varioloid as true variola,—

even cases of eczema, not excluding measles; cases of simple angina as diphtheria. Now, if value is to be placed on statistics, they must be correct. If the inaccuracy just mentioned is the result of indifference, it is censurable; if it arises from the want of knowledge, it is lamentable. These remarks do not apply to our city health department alone: such reports have been reduced to book form by some medical authors, and are given to the general practitioner as a compilation of medical facts based upon research and experience.

It is true that medical men differ frequently in their opinion, and certainly have a right to, when theory is the foundation for argument; but, when facts are demonstrated, let us acquiesce, no matter what original theories we are loath to give up.

As an illustration, I will take the disease diphtheria. The recent information with regard to the existence of that dreaded disease in our midst makes it appear that it prevails to an alarming extent. The lines have been so well defined that the connecting link has made its existence seemingly general throughout the city. I ask the question: Does diphtheria prevail to such an alarming extent as reported? From past experience, referring to the manner reports are made to the Health Department, and from information I obtain from active practitioners, who are reliable, I doubt it. That diphtheria is a distinct disease is questioned by many physicians high in authority. Reynolds, by Hartshorne, says regarding croup and diphtheria, "The opinion that membranous laryngitis, or tracheitis, 'true' croup, is a distinct disease from diphtheria has been supported by Prof. G. B. Wood, Austin Flint, J. Lewis Smith, Fordyce Barker, and others." Dr. J. F. Meigs contends against it. Besides these named abroad, C. West, Virchow, Niemeyer, Oppolzer, and Letzerich may be cited as favoring the doctrine of the *non*-identity of the two diseases. They all have their following. A table is given in Meigs and Pepper's Treatise on the Diseases of Children, which shows that after diphtheria had about 1860 become recognized in Philadelphia as a new disease, at that time the mortality from it had added for several successive years more than three hundred to the deaths in each year in that city, while the deaths from croup continued to number annually, as before, from two hundred to over four hundred. The foregoing is the difference made with croup. Now, when we refer to scarlatina in its second and third form we have still greater difficulty in getting

at the proper record. In turning to the number of deaths from scarlet fever and diphtheria, we singularly find them running hand in hand together: where scarlet fever is found diphtheria is near at hand,—yes, under the same roof. So with diphtheria. Refer to Board of Health returns, 1860–81 inclusive.

To give a reason for such uniformity would be only to speculate with the difference of opinion as regards the identity of the two diseases.

The physician who makes no distinction and pronounces his cases croup,—probably scarlet fever,—and the one who professes to recognize the difference and reports his cases accordingly, certainly tend to produce confusion and doubt.

Whilst there are, I regret to say, physicians who conceive it a matter of importance to elevate themselves in the estimation of their patients and friends by magnifying the disease under treatment, so there are others who, to relieve the distress and anxiety of devoted parents or anxious friends, resort to the opposite, and report accordingly, unless death takes place. When the cause is correctly assigned, call disease by its proper name. It is the law, and the success of our medical labors is thereby determined. As the question of identification as regards croup, diphtheria, and scarlet fever is still in the balance and unsettled, the records certainly must be unreliable as regards classification. As stated before, I have known chicken-pox represented as small-pox (aborted *à la* Hahnemann), and a neighborhood up in arms with excitement. So I have known cases of simple angina by the score pronounced diphtheria. A prominent dupe of the Hahnemann doctrine stated to me the success of his treatment of diphtheria,—that his cases recovered in a few days. To my utter astonishment, the same remark was made to the late Health Officer in my hearing by a prominent physician. Let me say here, diphtheria does not get well in a few days, any more than the scarlet fever, smallpox, or typhoid fever. It is turning science into ridicule, and making a mockery of our profession. Colleagues, give all such expressions from members of the profession your positive disapproval. It is done for no honorable purpose. In our statistics of variola I have failed to find any classified statement including varioloid. We have accepted the great obstacle to compulsory vaccination in this country. The time has not arrived when such an arbitrary

step can be taken, and until the general government takes the matter in hand we are powerless. Yet it is all-important that the community should be impressed with the necessity of the protective influence of vaccination. Towards accomplishing such an end there should be furnished *locality statistics*, to refer the laity and others who happen to be skeptical. No better opportunity was afforded, and still continues, though in a less degree, during the existence of variola, for our own people in our own city to secure such a record. Cases of variola and varioloid are reported to our Health Office, and no difference is made; they are all placed under one head,—"variola." The reports are pigeon-holed,—neither useful nor ornamental. Unless interference is required, such as sending the patient to the Municipal Hospital, disinfecting the premises, etc., the whole matter as at present carried out is farcical. Now, if the protective influence of vaccination is in extent what is claimed for it, no better evidence could be given to the public than the number of protected cases, or modified variola, as compared with the number of cases of the true disease.

Statistics, as regards this disease alone, as emanating from health boards, are in a great degree unreliable, rendered so by the careless manner the reports are furnished; and, as the discrepancy holds good in this special disease, they no doubt do in others. There should be a commission of medical men appointed, who should have discretionary power to deal with all such matters as contagious and infectious disease where the health and business interests of a large city such as ours are involved. By referring to the health of English towns, we find diphtheria and scarlet fever come in for their share, also in Scotch towns, also Dublin, also Calcutta; but what a significant absence of the disease croup! Also in the general statistical returns, which the *Lancet* states are "remarkably incomplete," and further on states that more precise mortality statistics should be forthcoming for such a city as Calcutta, which has a population little short of half a million of persons. "We are, unfortunately, still ignorant of the conditions essential to the development, and to some extent to the spread of diphtheria; and with a view of acquiring further information as to its etiology, both the local and government boards and the British Medical Association have instituted a series of detailed inquiries, the results of which may, it is hoped, hereafter give some indication as to

how the diphtheria mortality may be lessened." (*Lancet.*) Now, it becomes the individual members of this and the other medical societies to urge upon the proper authorities the appointment of a commission to investigate disease in general, regarding causation, prevention, etc. Let there be light! I grant that it is difficult many times to reconcile difference of opinion; but where facts are pronounced such an important reference as the present subject should be carefully guarded. One word in regard to births,—one of the most important divisions of vital statistics. I have from time to time within the past fifteen years reported many cases of births where no midwife or other person having knowledge of the registration law was present,—the cases coming under my notice incidentally. How many are not reported? To give you an idea of the manner this part of the duty of the physician and others is performed, I will read an entract from a home journal: "According to their registration reports, the deaths in the city of New York continue to exceed the births. For the last year, 1882, the respective figures are thirty-seven thousand eight hundred and twenty-six deaths to twenty-seven thousand three hundred and twenty-one births, (being ten thousand five hundred and five more deaths than births)." At this rate the metropolis would die out if it were not for accessions of immigrations. But the fact is, these birth registrations have nothing in the value of accuracy about them. Ours in Philadelphia have been defective enough, on account of the default of doctors and midwives to report births to which they are professionally called. Medically and legally the system is wrong by its leniency. Therefore, our own reports are made incomplete. Of certificates of causes of death, as usually furnished, a certain proportion are worse than useless, since the cause is erroneously stated. This may be due either to a desire to conceal the true cause from the family, as in cases of syphilis, suicide, alcoholism, etc., or to carelessness and erroneous diagnosis. In many cases, post-mortem examination reveals little, by reason of the lack of knowledge of pathology.

Pathology, as taught in our medical schools, is deficient in its system, and, unfortunately, difficult to remedy at once. Much has yet to be known of cause and effect as applied by the investigator for our guidance. I have maintained for years that practical and pathological anatomy should not be separated, but advantage taken of every pathological condition which presents itself in the dissecting-room. Well

persons only die by violence; hence your material is abundant. No work was ever published where more care and pains were observed than in the "Medical and Surgical History of the War of the Rebellion." Dr. Otis, in his report to Surgeon-General Barnes, June 30, 1867, says, "At the present day surgical statistics commonly encounter severe criticisms, and the results of the numerical method of medical and surgical investigation are viewed with distrust. In the collection of surgical statistics there are several special sources of fallacy. The desire for distinction of ambitious operators sometimes tempts them to report successful results prematurely, and to fail to record unfortunate cases. Feverish partisans of particular operative procedures in accumulating statistics not unfrequently evince an unpardonable disregard for the fundamental rules of evidence, and admit testimony abounding in transparent fallacies." As Dr. Otis once remarked, it was an easy matter to manufacture cases, especially for occasions and publications.

Colleagues, I have occupied your time with a subject which may appear to you at first novel and as dry as the study of dry bones to the student; but you must recognize the importance of *correct* statistics, and how unreliable they are as furnished.

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